

Optionally, either the diffusion barrier or the ballast resistor layer can be deposited at the same time when the catalyst is deposited through the track-etched membrane.

e. Insert the following paragraph between [0078] and [0079] on page 27

In both the embodiments shown in FIG.8 and FIG. 9, the nano-structures are distributed along and over the cathode electrodes in patches. However, this is not necessary for an electron source or display to be addressable. In fact, the nano-structures can be distributed continuously either over and along the cathodes or over the entire substrate. Since only at the intersections where both cathode and gate electrodes are present, the nano-structures at other locations will not emit electrons. It should also be pointed out that when a conductive material is used to embed the nano-structures in an addressable electron source or display, care must be taken to maintain the electrical isolation between the cathodes. Using a non-conductive material to fill the space between the cathodes should solve the problem.

2. Claims

a. Replace claim 19 with the following text:

[c19]

An electron source as recited in claim 1,

wherein the first cathode electrode is configured as a plurality of electrically isolated cathode electrodes, each for supplying an independent source of electrons;

wherein the second gate electrode is configured as a plurality of electrically isolated electrodes, each intersecting with the said plurality of cathode electrodes and having one or a plurality of apertures aligned with the apertures in the said insulator at the intersections, each gate electrode for controlling the emission of electrons through the apertures along the gate electrode;

activation of a selected cathode and a selected gate electrode determines an intersection where the nano-structures emit electrons.

b. Replacing claim 23 with the following text:

[c23]

A display as recited in claim 20,

wherein the first cathode electrode is configured as a plurality of strip-like cathode electrodes extending substantially in the same direction in such a manner as to be spaced from each other at intervals in the transverse direction, each cathode strip for providing an independent source of electrons;

wherein the second gate electrode is configured as a plurality of strip-like gate electrodes extending in such a manner as to intersect the said plurality of cathode electrodes and to be spaced from each other at intervals in the transverse direction, and having one or a plurality of apertures aligned with the apertures in said insulator at the intersections, each gate electrode for controlling the emission of electrons through the apertures along the gate electrode; and

wherein the anode electrode is configured as a plurality of strip-like anode electrodes each extending in such a manner as to be opposed to the corresponding one of the said second gate electrodes.

c. Add the following 4 claims:

[c33]

A method of growing one or a plurality of mono-dispersed nano-structures of predetermined diameter and average spacing to be used as field emission emitters, the method comprising:

providing a proper substrate that is ready to accept growth of nano-structures;

laying down a mask over the said substrate, the mask consisting of a thin sheet of material punctuated with one or a plurality of fine pores of desired diameter and average spacing between pores;

depositing one or a plurality of catalyst dots on the substrate through the said mask;

removing the mask;

growing one nano-structure from each said catalyst dot.

[c34]

A method as recited in claim 33,

wherein the mask includes ion-track etched membranes and membranes formed from etching using an ion-track-etched membrane as a mask.

[c35]

A method as recited in claim 34, wherein the ion-track etched membrane is pre-fabricated.

[c36]

A method as recited in claim 34,

wherein the ion-track etched membrane is fabricated on the substrate by: coating the substrate with a solid thin film, and subjecting the coated substrate to ion tracking and etching processes to form fine pores in the film.